

CLAIMS

1. An article sanitation device comprising:
- a container defining an inner chamber and including an inlet and an outlet;
- a motor operable to move the container;
- 5 a duct in fluid communication with the inlet and the outlet;
- a fan operable to circulate fluid along a flow path that extends through the inner chamber and the duct;
- an ozone generator operable to provide ozone to the inner chamber;
- an ozone neutralizer operable to remove ozone from the inner chamber; and
- 10 a filter element positioned to remove particulate matter from the fluid in the flow path, the ozone and the filter element cooperating to substantially destroy biological contaminants in the inner chamber and remove the biological contaminants and particulate matter from the flow path.
- 15 2. The article sanitation device of claim 1, wherein the ozone generator supplies ozone to the flow path upstream of the inlet.
3. The article sanitation device of claim 1, wherein the ozone neutralizer removes ozone from the flow path downstream of the outlet.
- 20 4. The article sanitation device of claim 1, wherein the filter element is in the flow path between the inner chamber and the ozone neutralizer.

5. The article sanitation device of claim 1, further comprising a housing surrounding the container, wherein the container is rotatable within the housing by the motor to agitate an article to be sanitized inserted into the inner chamber.

5 6. The article sanitation device of claim 5, wherein the container includes an access opening through which the article to be sanitized is insertable into the inner chamber, the article sanitation device further comprising a lid coupled to the housing and movable to open and close the container.

10 7. The article sanitation device of claim 6, wherein a portion of the duct extends through the lid when the container is closed.

8. The article sanitation device of claim 5, further comprising an outer chamber surrounding the inner chamber and defined between the container and the housing, wherein the duct extends through the outer chamber.

9. The article sanitation device of claim 5, further comprising an indicator coupled to the housing, the indicator indicating a condition of sanitation of the article to be sanitized.

20 10. The article sanitation device of claim 5, wherein the housing at least partially defines a mailbox.

11. A mailbox for destroying contaminants of and removing particulate matter from mail, the mailbox comprising:

an inner container defining an inner chamber having an inlet and an outlet;

a fan operable to circulate fluid through the inner chamber;

an ozone generator operable to provide ozone to the inner chamber to destroy contaminants; and

a filter element positioned to remove particulate matter from the inner chamber.

12. The mailbox of claim 11, further comprising an outer container at least partially defining an outer chamber having an access opening, wherein the inner container is inside the outer container.

13. The mailbox of claim 12, wherein the inlet is located at the access opening.

14. The mailbox of claim 12, wherein the inner container is rotatable with respect to the outer container to agitate the mail.

15. The mailbox of claim 11, further comprising a duct communicating with the inlet and the outlet, wherein the ozone generator is coupled to the duct.

16. The mailbox of claim 15, wherein the filter element is in the duct downstream of the outlet.

17. The mailbox of claim 15, further comprising an ozone neutralizer coupled to the duct to remove ozone from the duct.

18. A method for sanitizing mail, the method comprising:
providing a mailbox including an inner chamber and a selectively closable access opening;
inserting an article of mail into the inner chamber;
closing the access opening;
generating a flow of fluid including increased levels of ozone through the inner chamber upon closing of the access opening;
filtering the flow of fluid to remove particulate matter from the flow of fluid;
and
indicating that the mail has been sanitized.

19. The method of claim 18, further comprising removing the ozone from the flow of fluid.

20. The method of claim 18, further comprising:
removing the sanitized mail from the mailbox;
receiving a signal that indicates the sanitized mail has been removed; and

disabling the mailbox in response to receiving the signal, wherein disabling the mailbox prevents the act of generating a flow of fluid upon a subsequent closing of the access opening.

5 21. The method of claim 18, further comprising rotating the inner chamber upon closing of the access opening.

22. The method of claim 18, further comprising:
providing an electronic controller including a timer;
10 starting the timer upon closing the access opening; and
stopping the generation of the flow of fluid after a period of time is counted by the timer.

23. The method of claim 22, wherein the act of generating a flow of fluid
15 includes introducing additional ozone into the flow of fluid, the method further comprising stopping the introduction of additional ozone prior to the counting of the period of time by the timer.

24. A method for sanitizing an article comprising:
20 providing a container defining an inner chamber and having a selectively closable access opening;
inserting an article to be sanitized into the inner chamber;
closing the access opening;

generating a flow of fluid through the inner chamber;
moving the container to agitate the article in the inner chamber; and
adding ozone to the flow of fluid to substantially destroy biological
contaminates in the inner chamber.

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25. The method of claim 24, further comprising filtering the flow of fluid
to remove contaminants from the flow of fluid.

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26. The method of claim 24, further comprising neutralizing ozone in the
flow of fluid after adding ozone to the flow of fluid.

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27. The method of claim 24, further comprising:
indicating that a sanitizing process performed on the article has been
completed;
removing the sanitized article from the container;
receiving a signal indicating that the sanitized article has been removed; and
disabling future execution of the generating, moving, and adding steps in
response to receiving the signal.

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28. The method of claim 24, wherein moving the container comprises
rotating the container.

29. The method of claim 28, further comprising:

driving the container with a motor connected to an electrical power supply;
determining a power level of the electrical power supply;
comparing the power level to a lower limit; and
indicating when the power level is below the lower limit.

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30. The method of claim 24, further comprising:
providing an electronic controller including a timer;
starting the timer after closing the access opening; and
stopping generation of the flow of fluid after a period of time determined by
10 the timer.

31. The method of claim 30, further comprising stopping adding of ozone
to the flow of fluid prior to stopping generation of the flow of fluid.